WHAT IS CLAIMED IS:

1. An active cooling panel comprising first and second parts of thermostructural composite material each having an inside face and an opposite outside face, the parts being assembled together by bonding their inside faces together, and channels being formed by indentations formed in the inside face of at least one of the first and second parts,

the panel further comprising a sealing layer bonded to at least one of the first and second parts and situated at a distance from the assembled-together inside faces thereof.

2. A panel according to claim 1, wherein a sealing layer is situated within at least one of the first and second parts, separating the part into two portions between its inside face and its outside face, the two portions being bonded together by the sealing layer.

3. A panel according to claim 1, wherein a sealing layer covers at least one of the outside faces of the first and second parts.

4. A panel according to claim 1, wherein the sealing layer is a thin metal layer.

5. A panel according to claim 4, wherein the sealing layer is made of a metal selected from niobium, nickel, tantalum, molybdenum, tungsten, and rhenium.

6. A panel according to claim 2, wherein the sealing layer and the portions situated on the outside of the part provided with the sealing layer projects from the periphery of the panel.

7. A panel according to claim 1, wherein the channels are formed in the inside face of the part whose outside face

constitutes the face of the panel that is to be exposed to high temperatures while the panel is in use.

8. A panel according to claim 1, wherein stiffening ribs project from the outside face of the part situated on its side opposite from its side that is to be exposed to high temperatures while the panel is in use.

9. A panel according to claim 1, wherein the inside faces of the first and second parts are bonded together by brazing.

10. A panel according to claim 1, wherein the inside faces of the first and second parts are provided with metal coatings that are bonded directly together.

11. A method of manufacturing an active cooling panel, the method comprising the steps consisting in providing first and second parts of thermostructural composite material, each having an inside face and an outside face opposite to the inside face, the inside face of at least one of the parts presenting indentations forming channels, and in assembling the first and second parts together by bonding their inside faces together in such a manner as to obtain a cooling panel made of thermostructural composite material having circulation channels integrated therein, wherein at least one of the first and second parts is provided with a sealing layer situated at a distance from the inside face of the part.

12. A method according to claim 11, wherein a sealing layer is integrated within at least one of the first and second parts between its inside face and its outside face.

13. A method according to claim 12, wherein at least one of the first and second parts is made up of two distinct portions, and the portions are assembled together with the sealing layer interposed between them.

14. A method according to claim 11, wherein the outside face of at least one of the first and second parts is provided with a sealing layer.

15. A method according to claim 12, wherein a metal foil is used for the sealing layer.

16. A method according to claim 15, wherein a foil is used that is made of a metal selected from niobium, nickel, tantalum, molybdenum, tungsten, and rhenium.

17. A method according to claim 15, wherein the metal foil is assembled to the composite material of the first or second part by hot compression.

18. A method according to claim 17, wherein the metal foil is assembled to the composite material of the first or second part by hot isostatic pressing.

19. A method according to claim 11, wherein the inside faces of the first and second parts are assembled together by brazing.

20. A method according to claim 11, wherein at least one metal coating layer is formed on the inside faces of the first and second parts and said inside faces are assembled together by hot compression.

21. A method according to claim 20, wherein said inside faces are assembled together by hot isostatic pressing.

22. A method according to claim 11, wherein, prior to assembling together the inside faces of the first and second parts, treatment is performed to reduce the surface porosity

of the thermostructural composite material in at least one of said inside faces of the parts.

23. A method according to claim 22, wherein the treatment for reducing porosity comprises: applying a suspension to the surface of at least one of said inside faces of the parts, the suspension comprising a ceramic powder and a ceramic material precursor in solution, and then transforming the precursor into ceramic material.

24. A method according to claim 23, wherein the precursor is a polymer which is cross-linked and transformed into ceramic by heat treatment.

25. A method according to claim 23, wherein, once the precursor has been transformed into ceramic material, a ceramic deposit is provided by chemical vapor infiltration or deposition.